APCC
APEC CLIMATE CENTER

PICΛSO CoCO(Combined Climate Outlook)

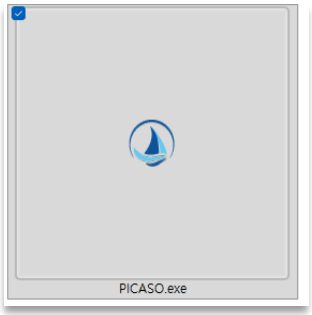
: Seasonal Forecasting using ACCESS-S and CoCO

- Day 2, Morning Session
- Jin-Hyeok Choi

PICASO

I. Preparation & Installing

Introduction to Core Programs



PICASO - CoCO

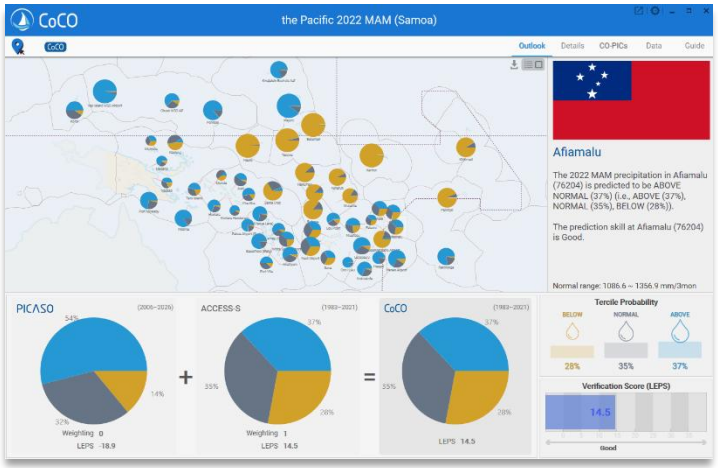
: Performs combined climate outlooks and statistical forecasting based on the CoCO system.

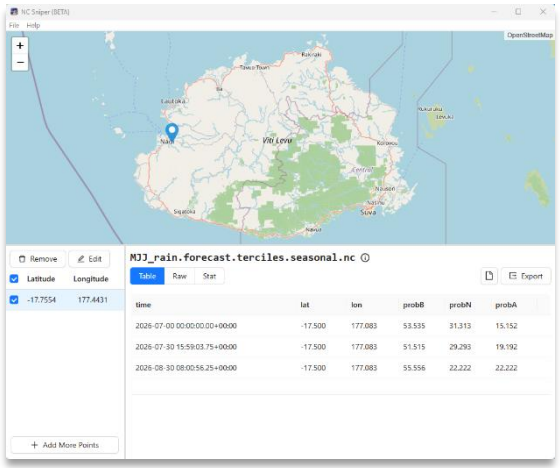
NC Sniper

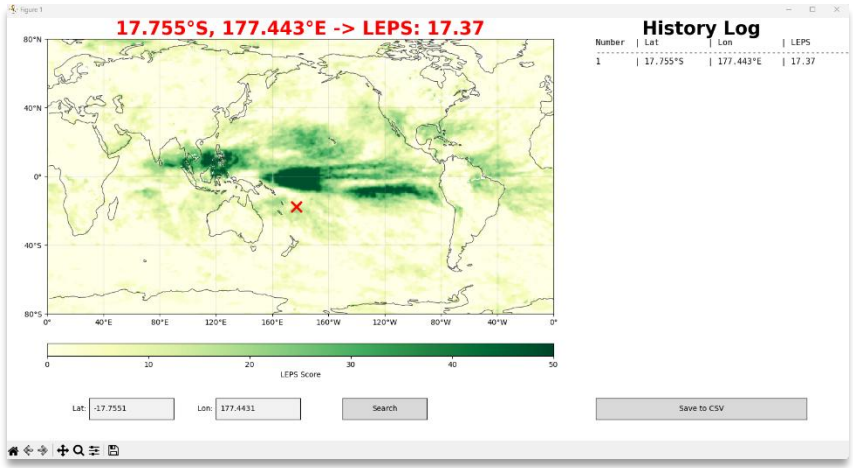
: Extracts seasonal forecast data (AN, N, BN, etc.) from large-scale .nc files like ACCESS-S.

LEPS Viewer

: Analyzes and extracts numerical data from downloaded LEPS images.

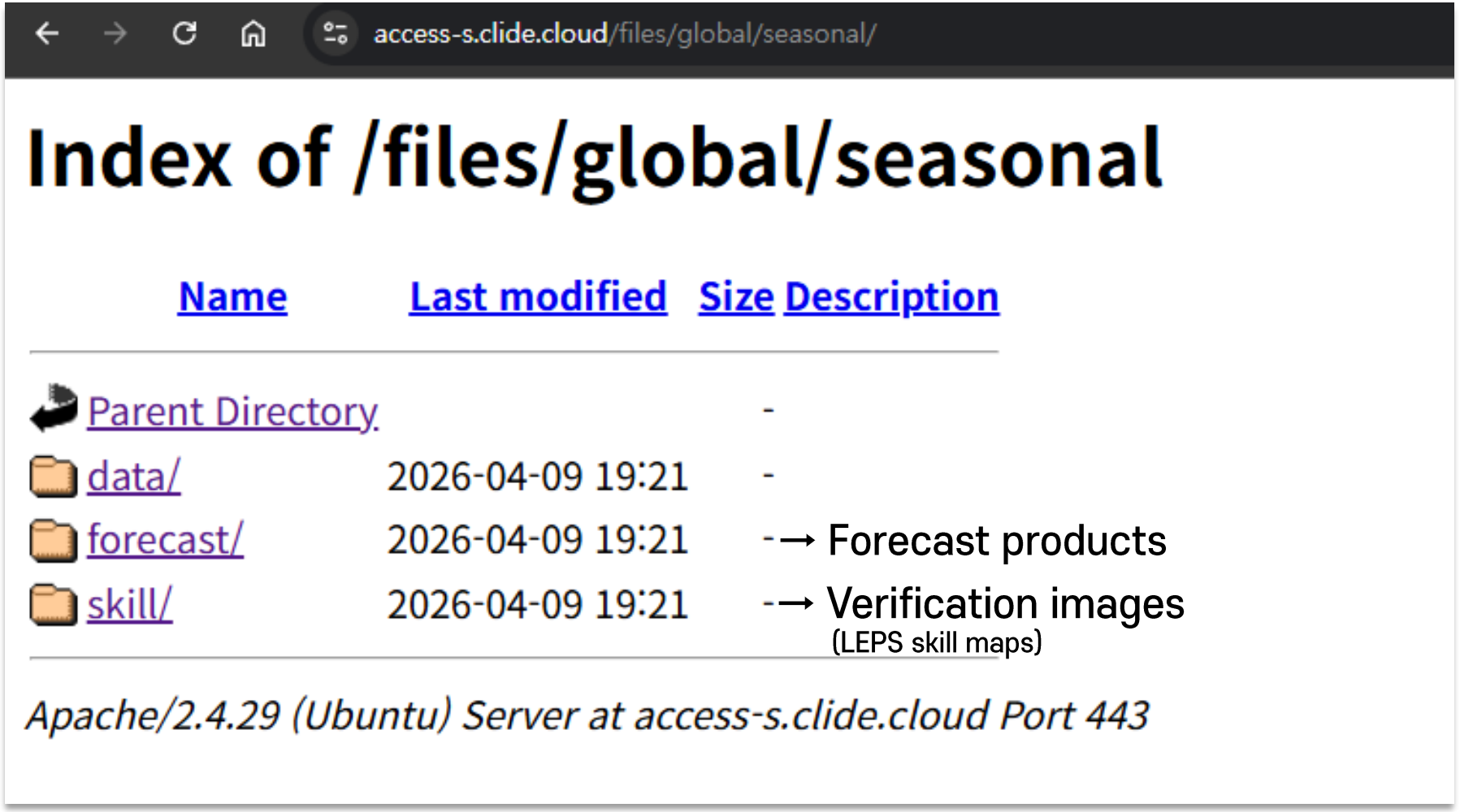






Downloading ACCESS-S Seasonal Forecast Data

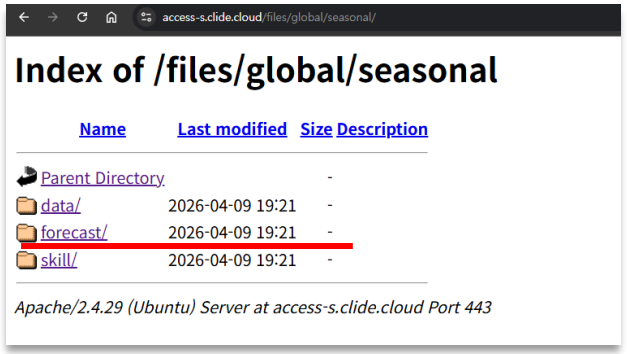
Go to: https://access-s.clide.cloud/files/global/seasonal/

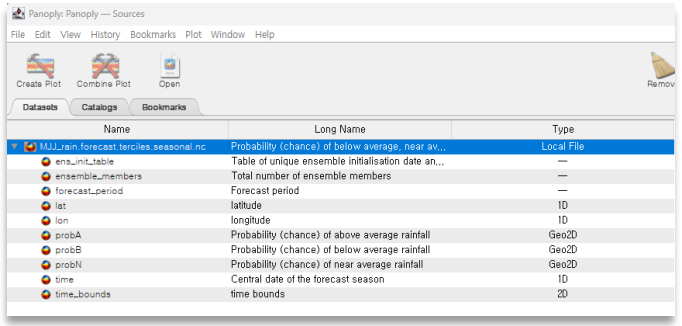


For CoCO rainfall analysis, download: rain.forecast.terciles.seasonal.nc

Downloading ACCESS-S Seasonal Forecast Data

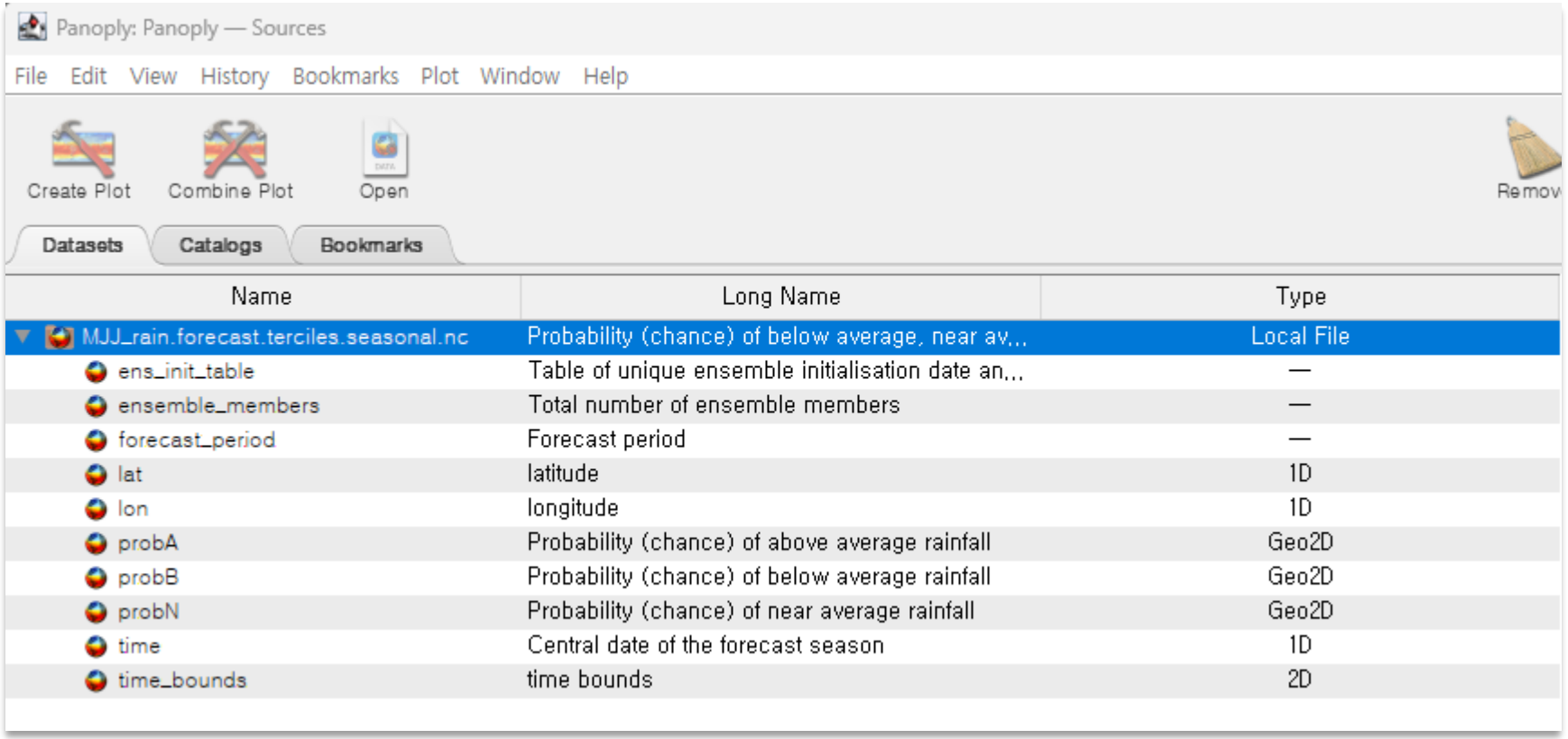
Go to: https://access-s.clide.cloud/files/global/seasonal/





For CoCO rainfall analysis, download: rain.forecast.terciles.seasonal.nc

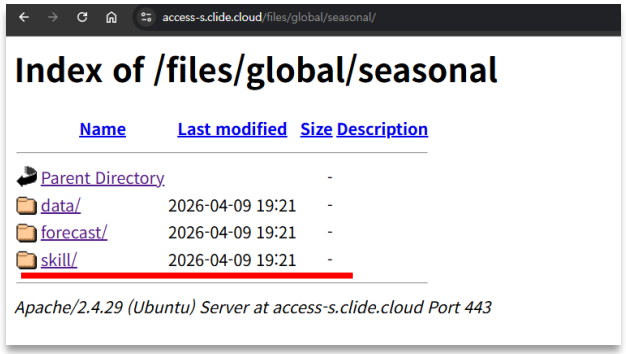
Downloading ACCESS-S Seasonal Forecast Data

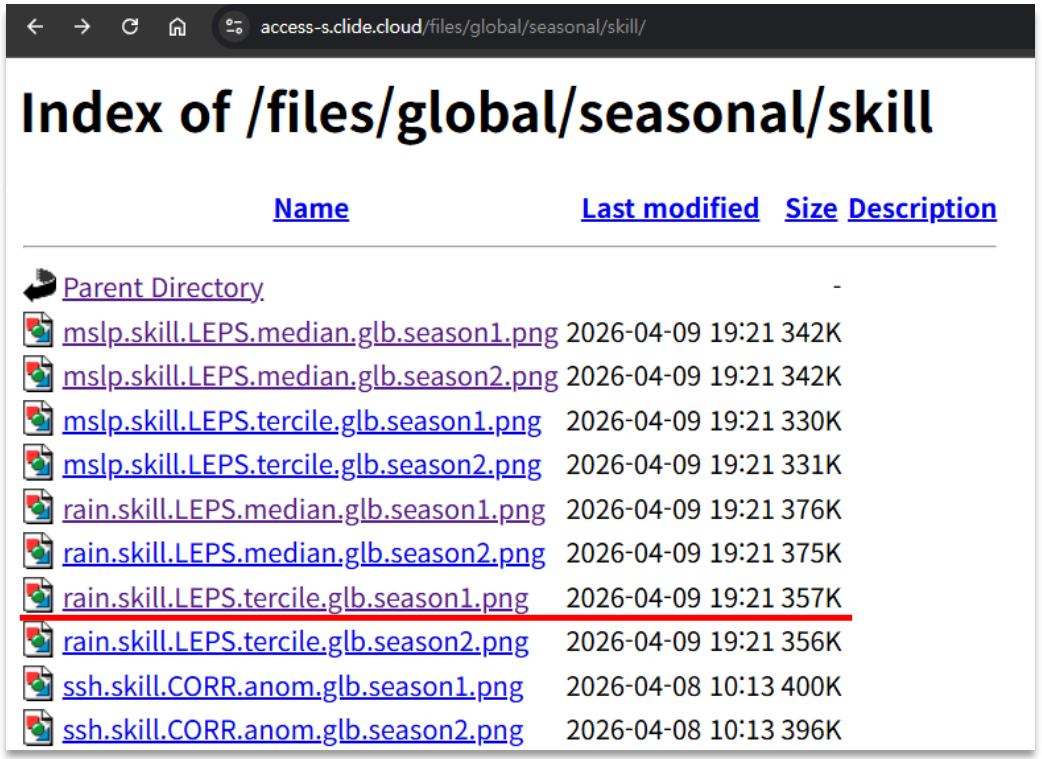


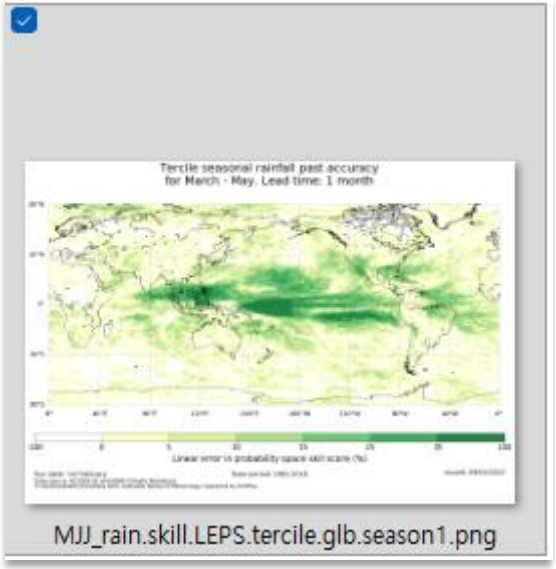
- **Open .nc file in Panoply to inspect variables:**
  - probA → Probability of Above Normal
  - probN → Probability of Near Normal
  - probB → Probability of Below Normal

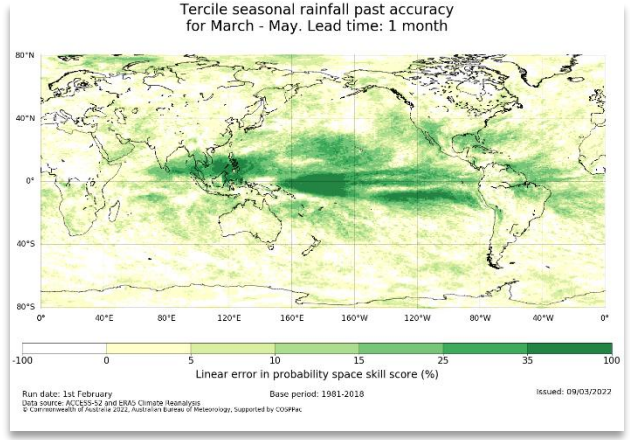
Downloading ACCESS-S Seasonal Forecast Data

Go to: https://access-s.clide.cloud/files/global/seasonal/









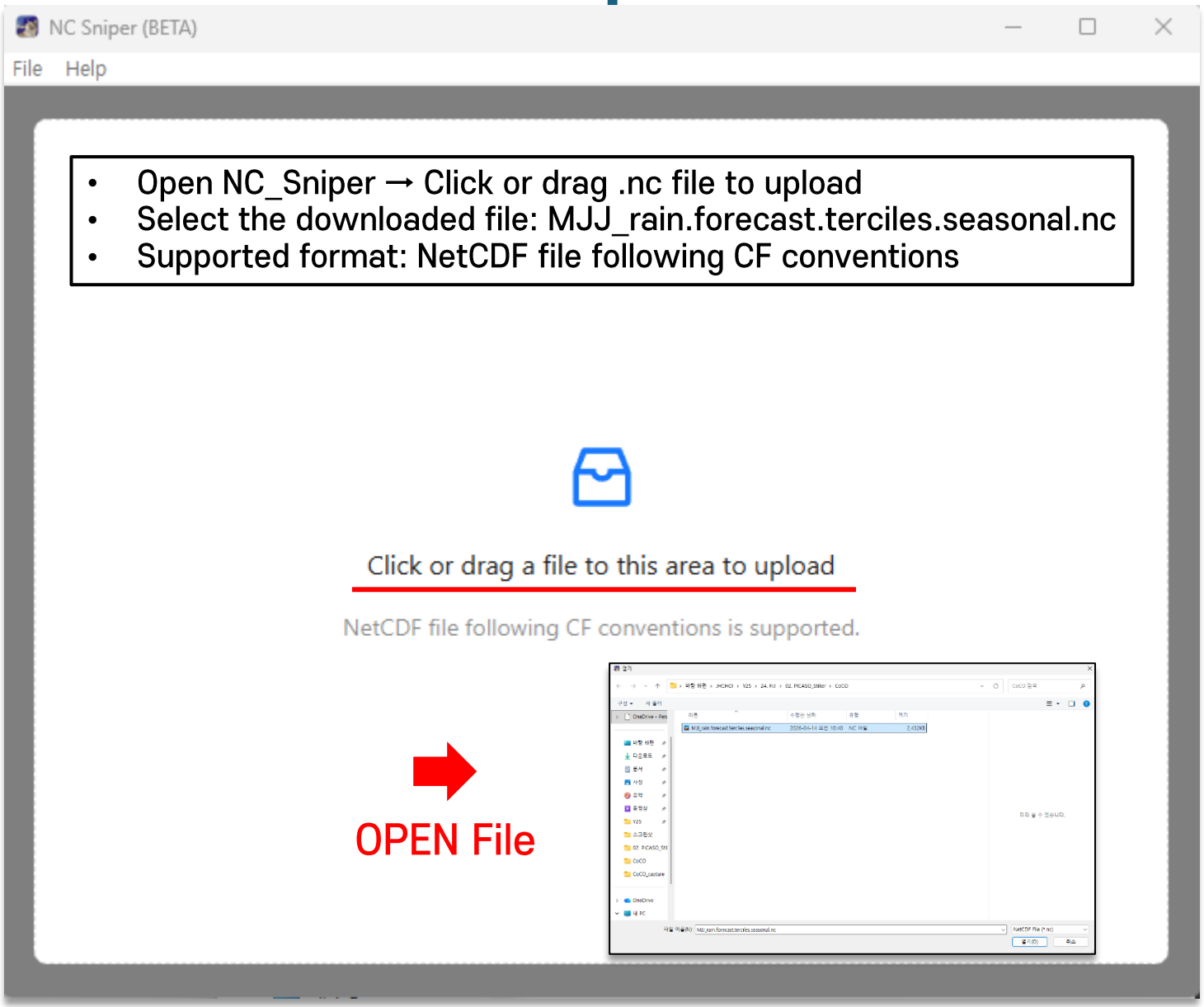
For CoCO LEPS, download: rain.skill.LEPS.tercile.glb.season1.png

Extracting Forecast Data with NC Sniper

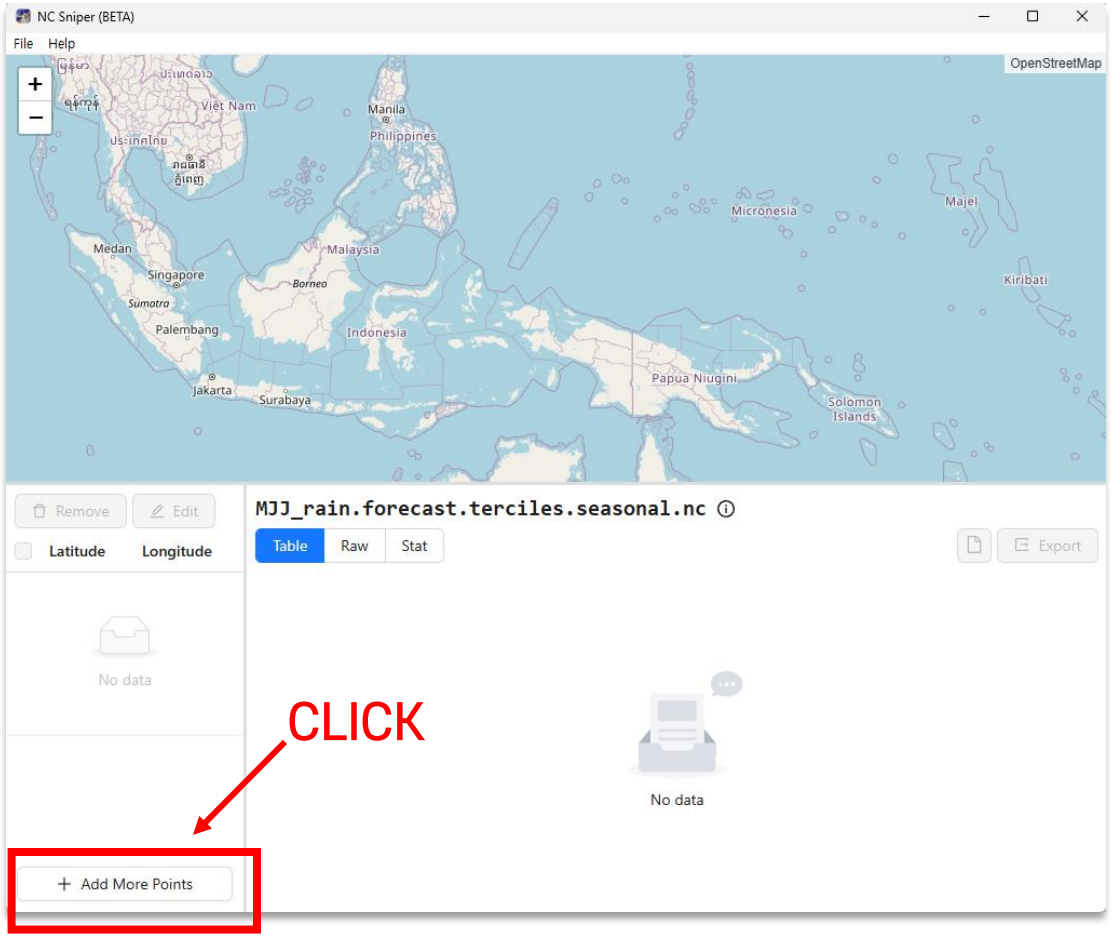
NC_Sniper

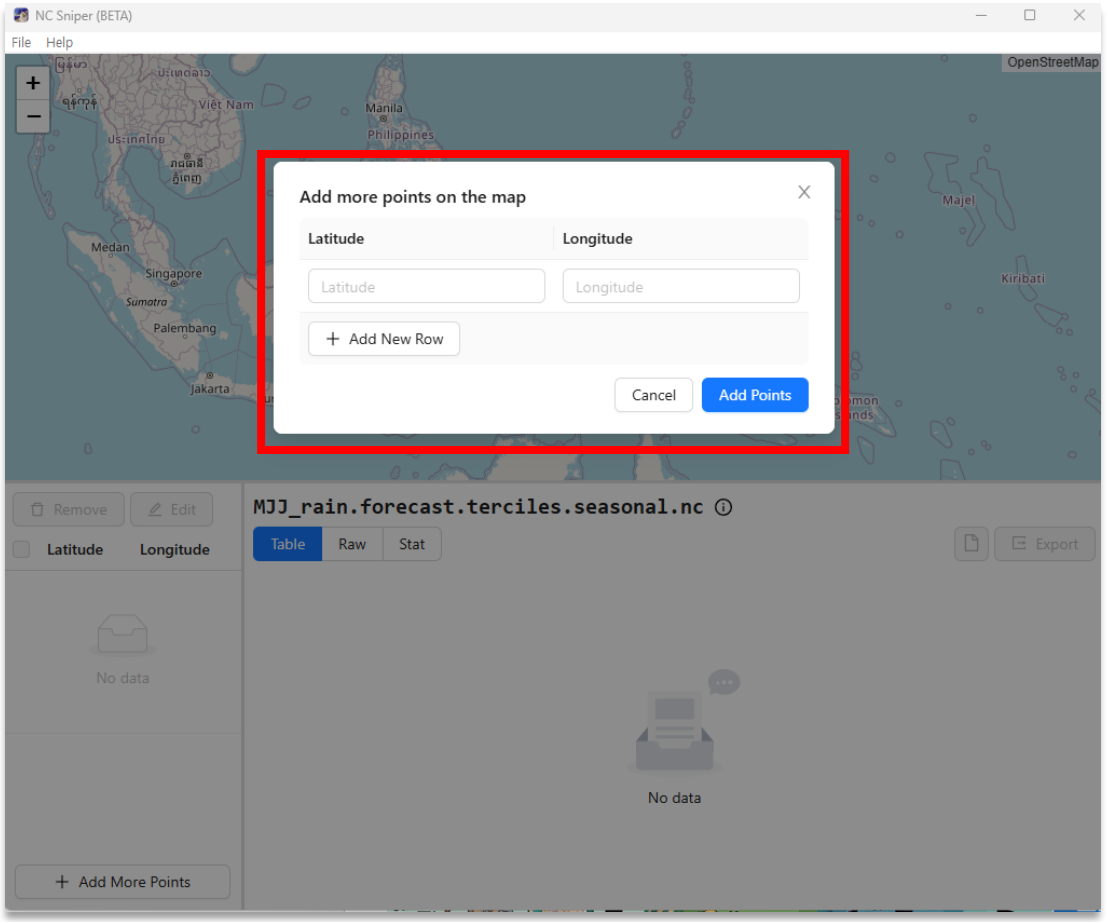
: Extracts seasonal forecast data (AN, N, BN, etc.) from large-scale .nc files like ACCESS-S.

OPEN



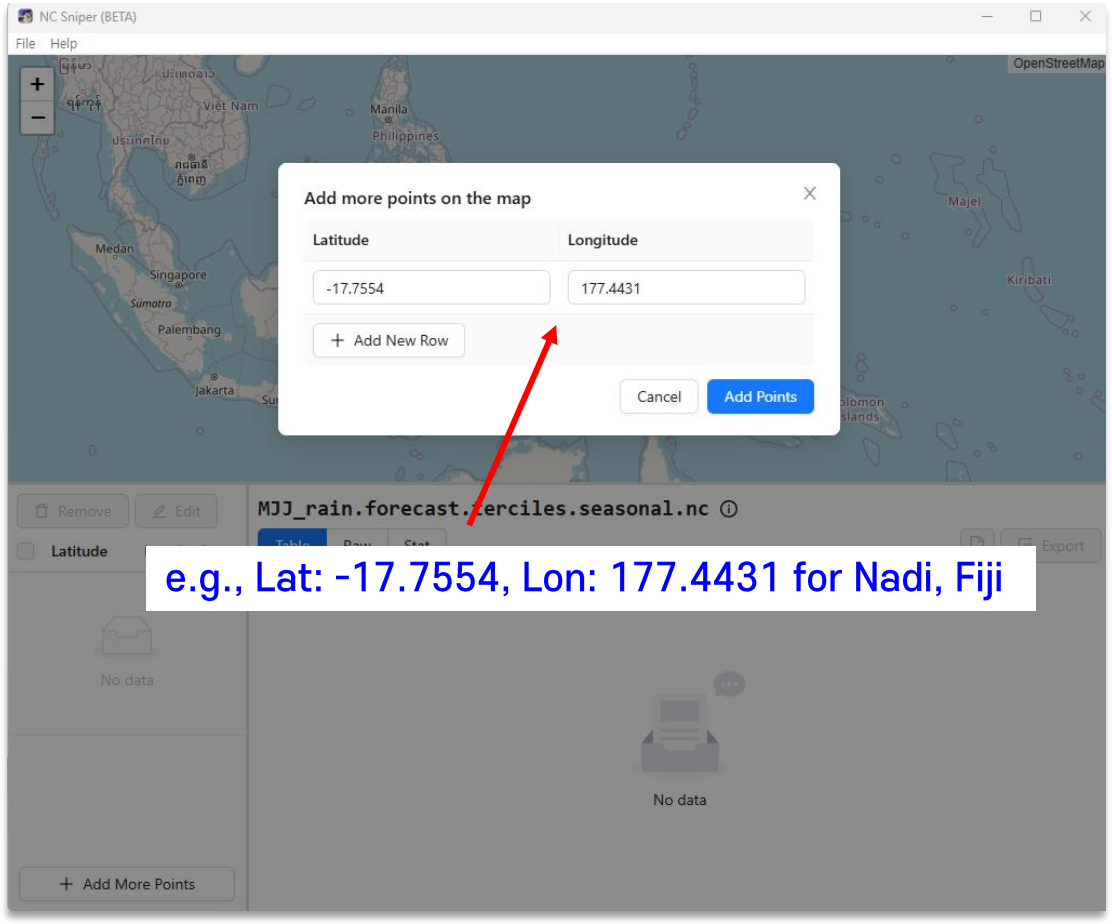
Extracting Forecast Data with NC Sniper

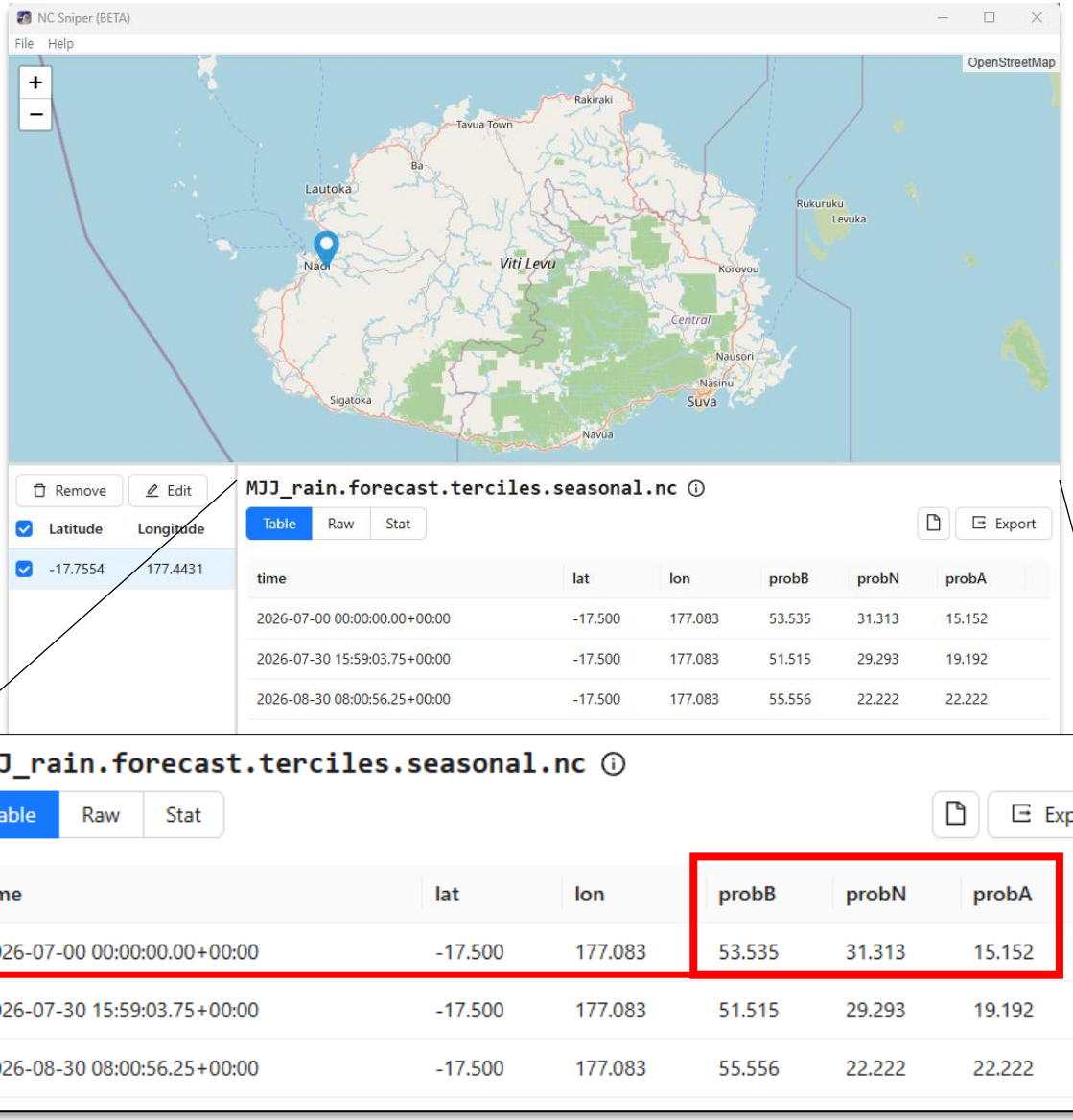




- File loaded successfully → Map displays the data coverage area
- Bottom panel shows file name and data tabs (Table / Raw / Stat)
- No data extracted yet → Need to add target coordinates

Extracting Forecast Data with NC Sniper





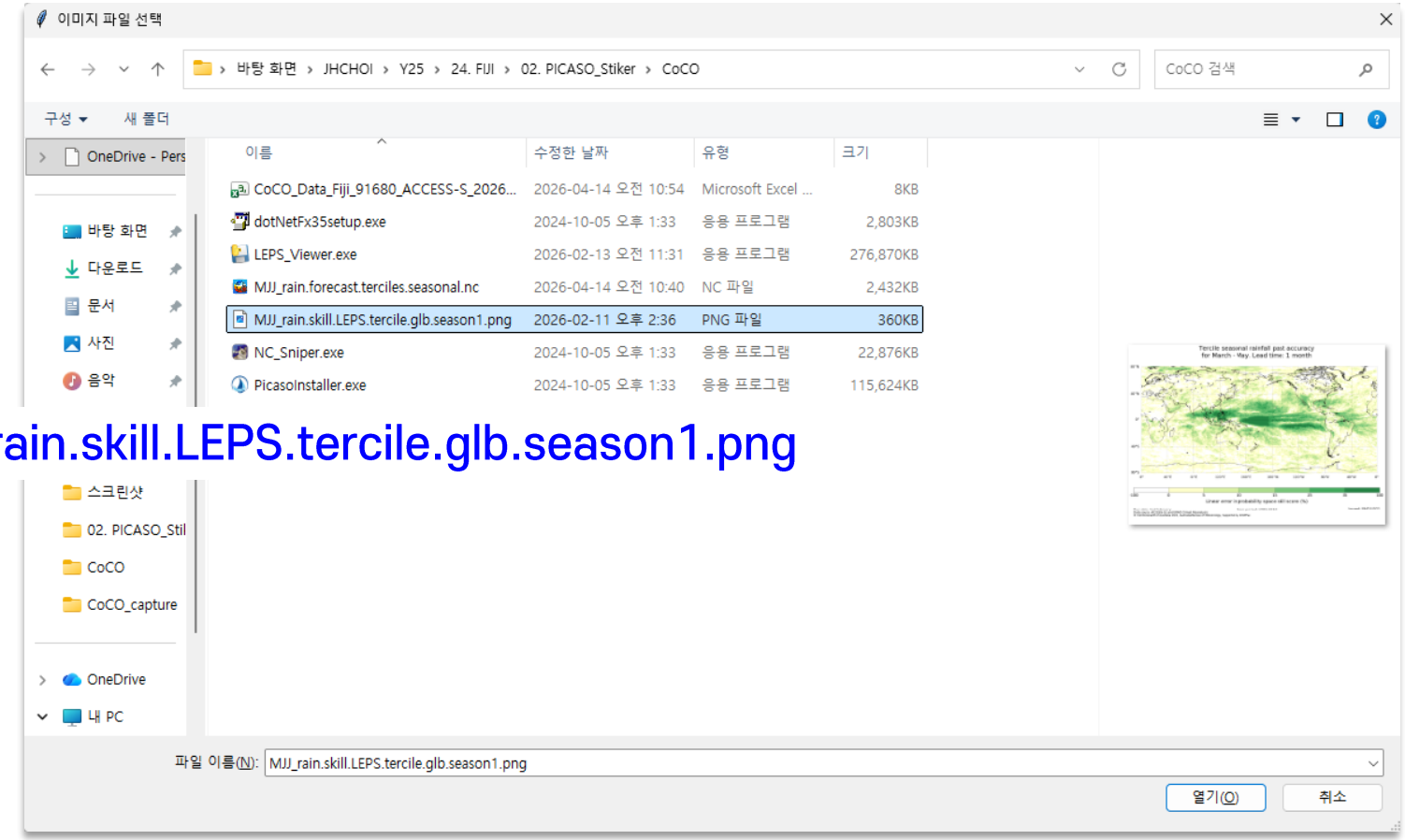
- Click "+ Add More Points" at the bottom left
- Enter target coordinates
- Click "+ Add New Row" to add multiple locations
- Click "Add Points" to confirm

Extracting LEPS Scores with LEPS Viewer

LEPS Viewer

: Analyzes and extracts numerical data from downloaded LEPS images.

OPEN

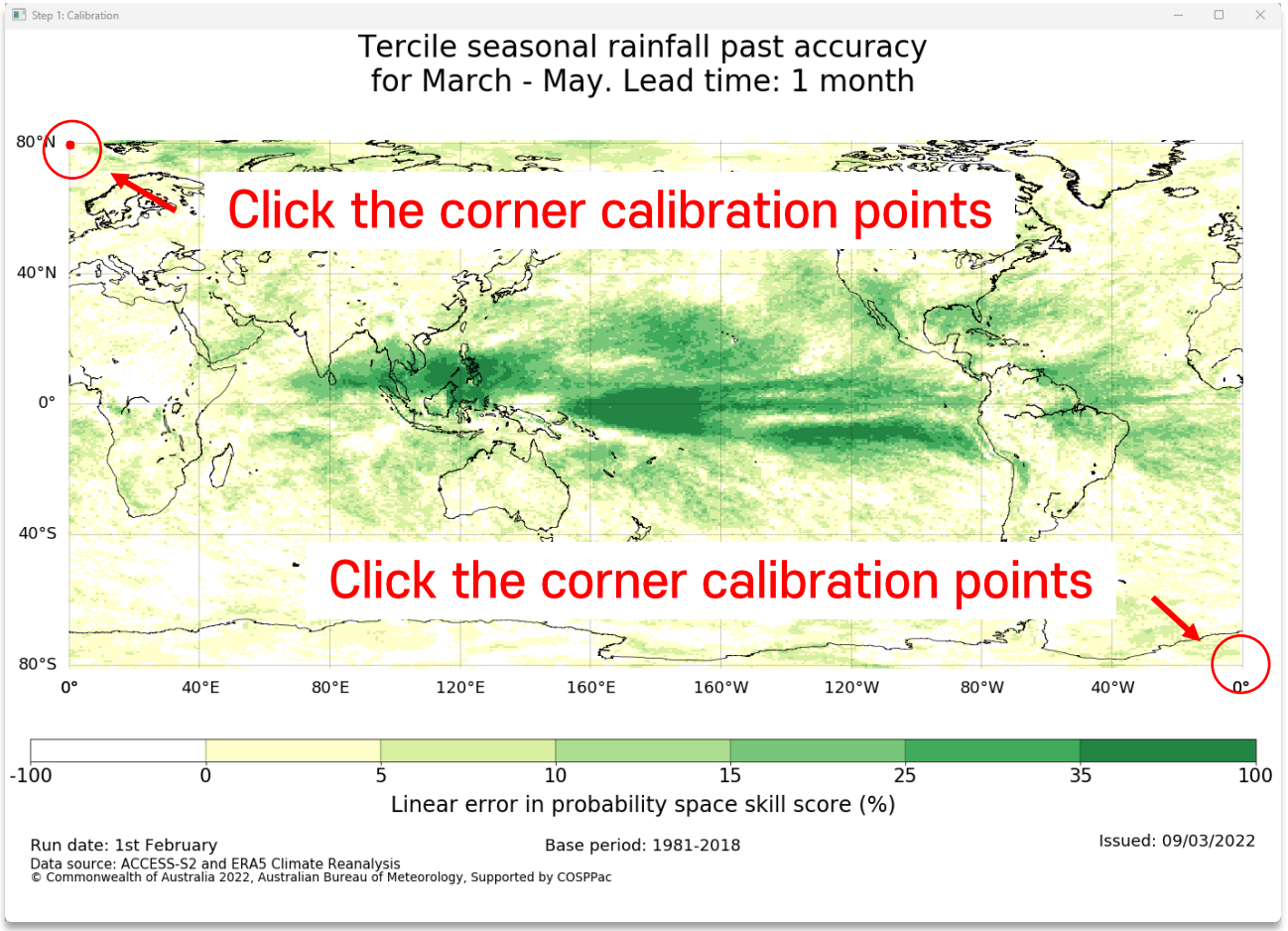


e.g., MJJ_rain.skill.LEPS.tercile.glb.season1.png

- Open LEPS_Viewer.exe
- Select the downloaded LEPS skill image:
- Calibration window opens automatically

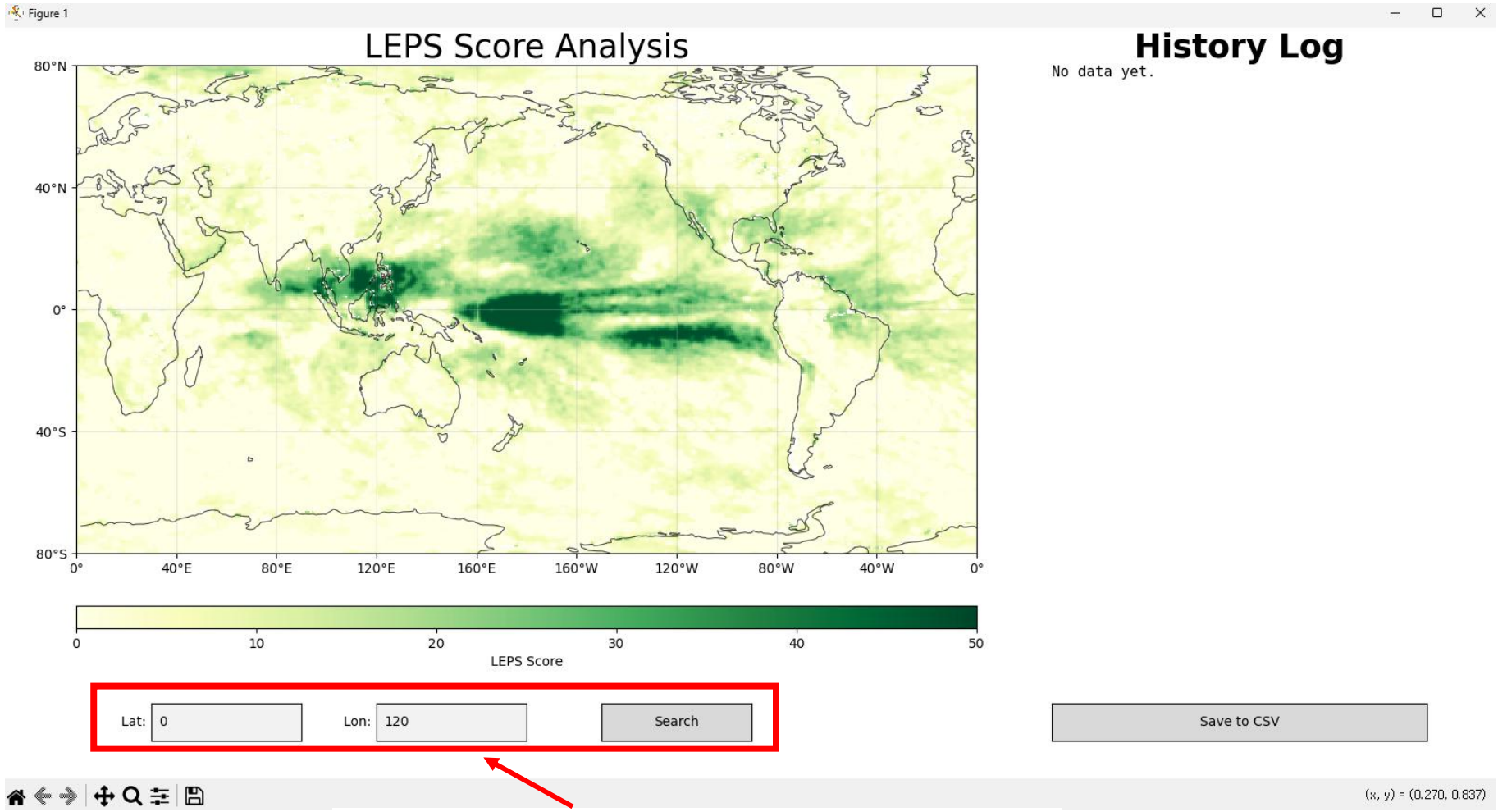
Extracting LEPS Scores with LEPS Viewer

OPEN IMAGE



- After calibration, the LEPS Score Analysis window appears
- Click the two red calibration points on the map

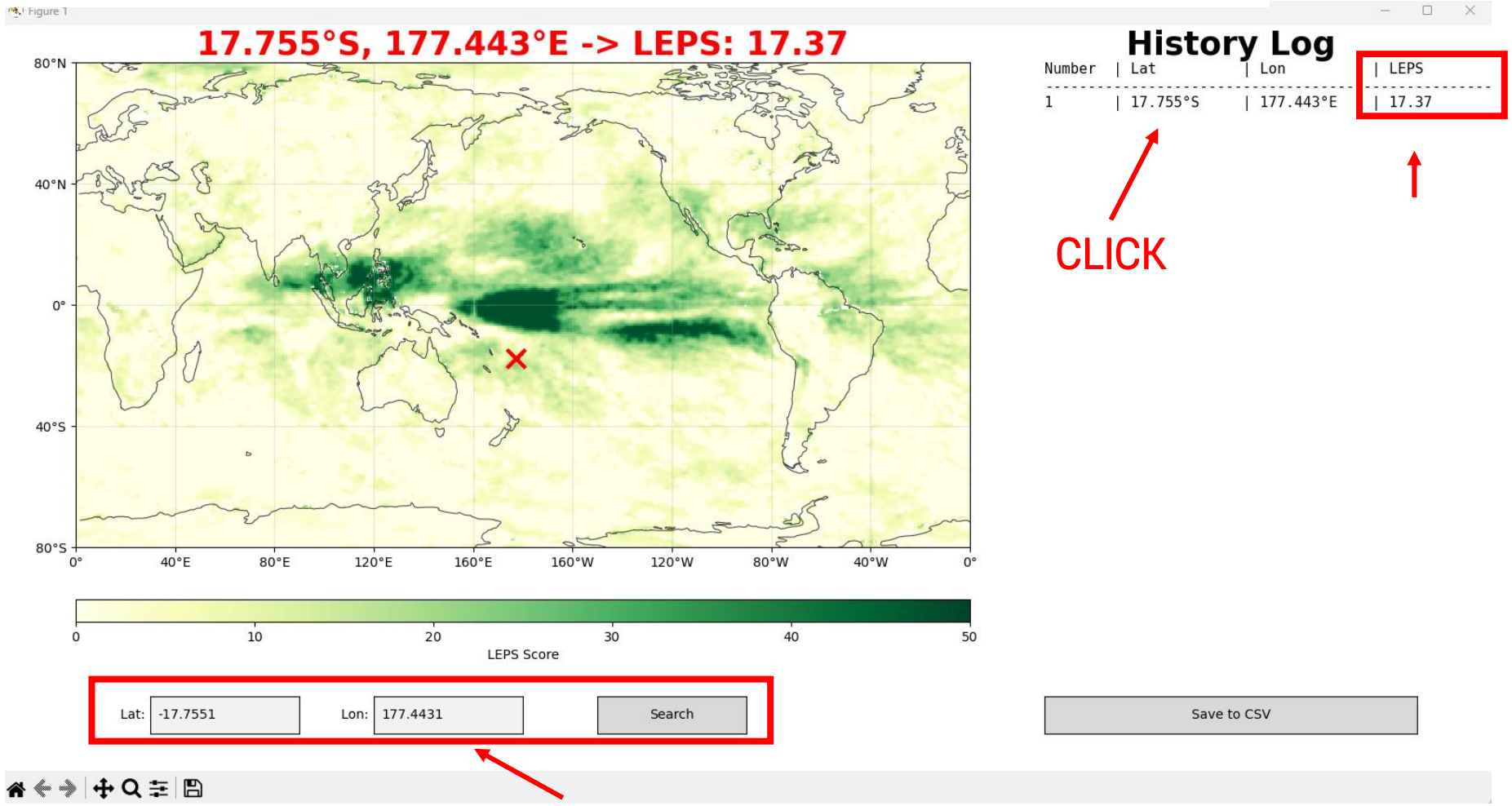
Extracting LEPS Scores with LEPS Viewer



e.g., Lat: -17.7551, Lon: 177.4431 for Nadi, Fiji

- Bottom: Enter Lat and Lon → Click "Search"
- Right panel: History Log records all searched points

Extracting LEPS Scores with LEPS Viewer

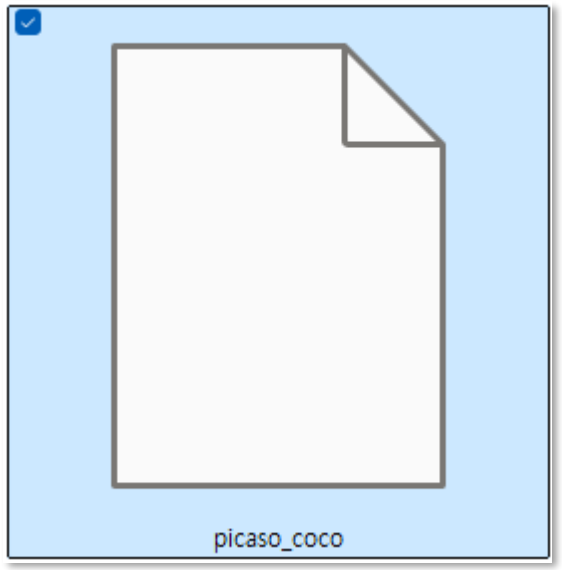


e.g., Lat: -17.7551, Lon: 177.4431 for Nadi, Fiji

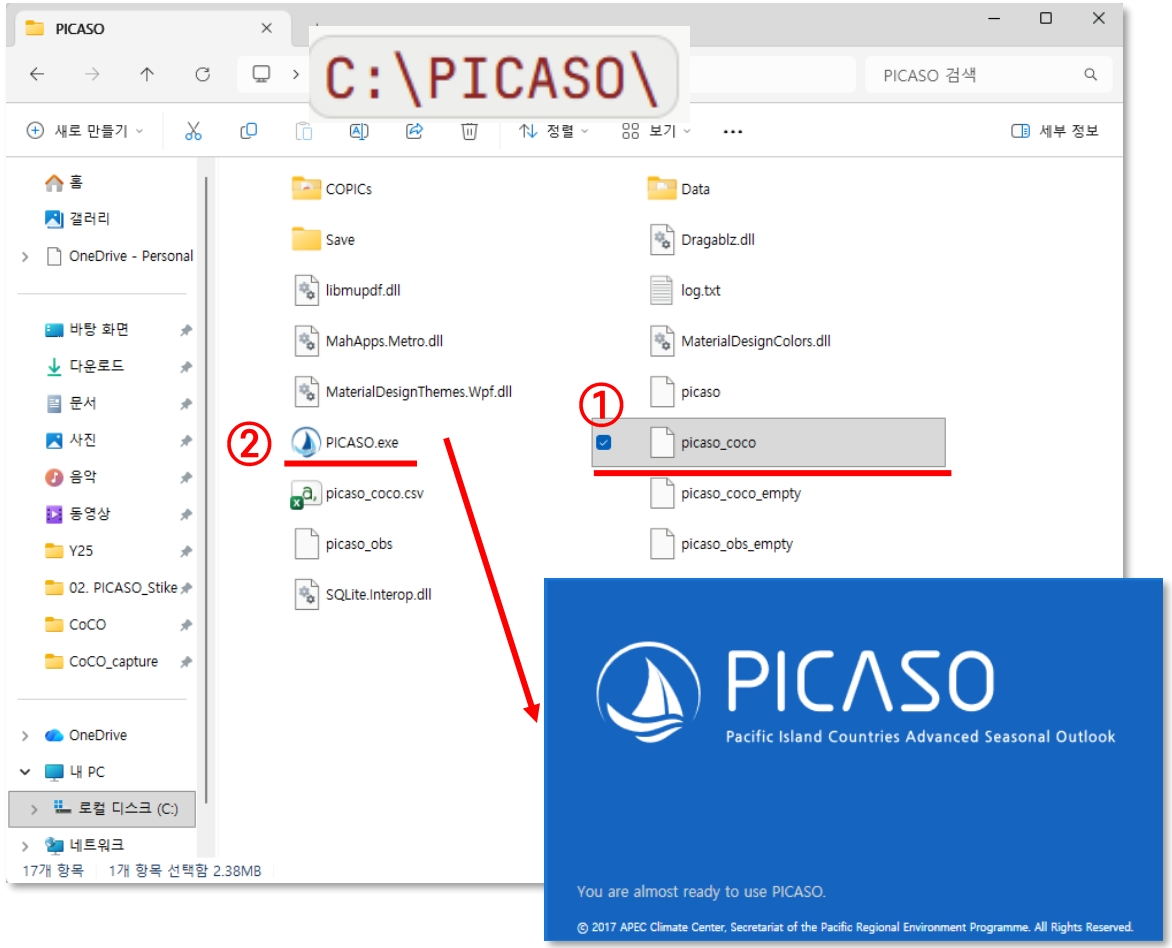
- Click "Search" → Red × marker appears on map
- Top banner shows result: 17.755°S, 177.443°E → LEPS: 17.37
- History Log records: Number, Lat, Lon, LEPS score

Setting Up and Launching PICASO

C:₩PICASO



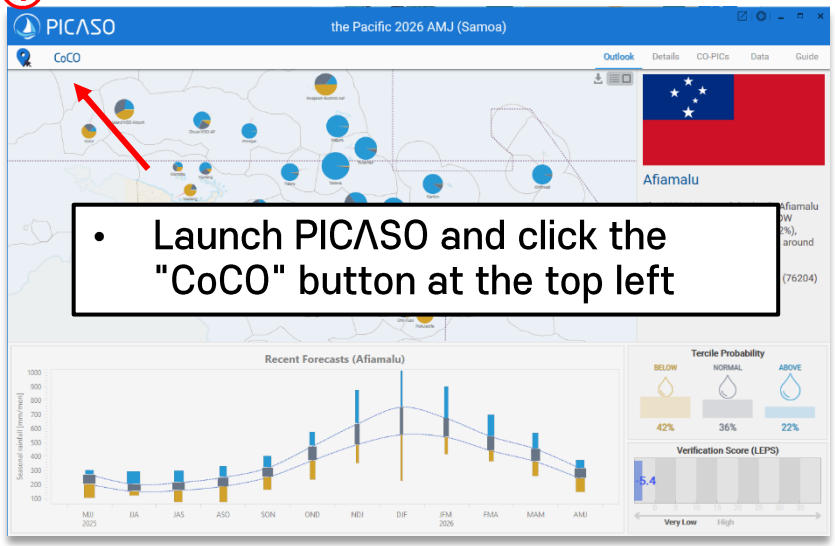
Copy and paste the picaso_coco file into `C:\PICASO\`



- Copy picaso_coco file to `C:\PICASO\` directory
- This file contains the CoCO forecast data generated from NC_Sniper and LEPS Viewer results
- Make sure the file is placed in the same folder as PICASO.exe

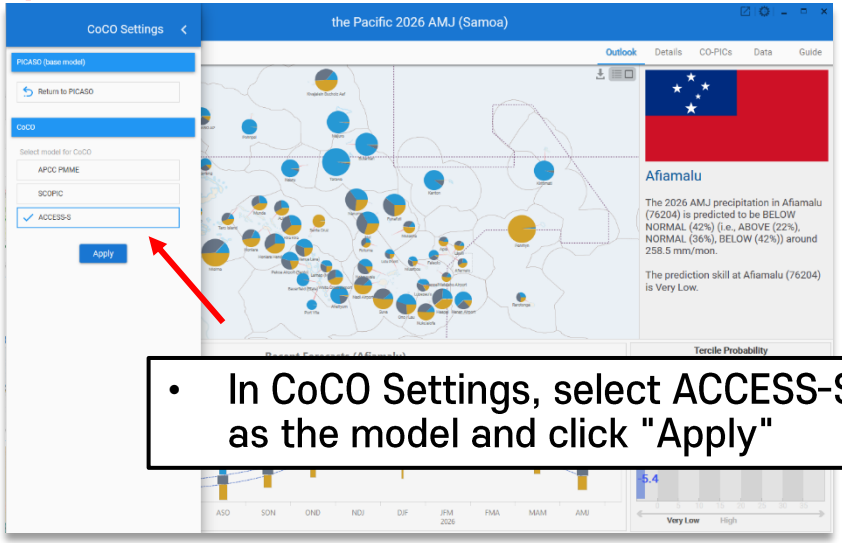
Running CoCO with ACCESS-S Data

①



- Launch PICASO and click the "CoCO" button at the top left

②

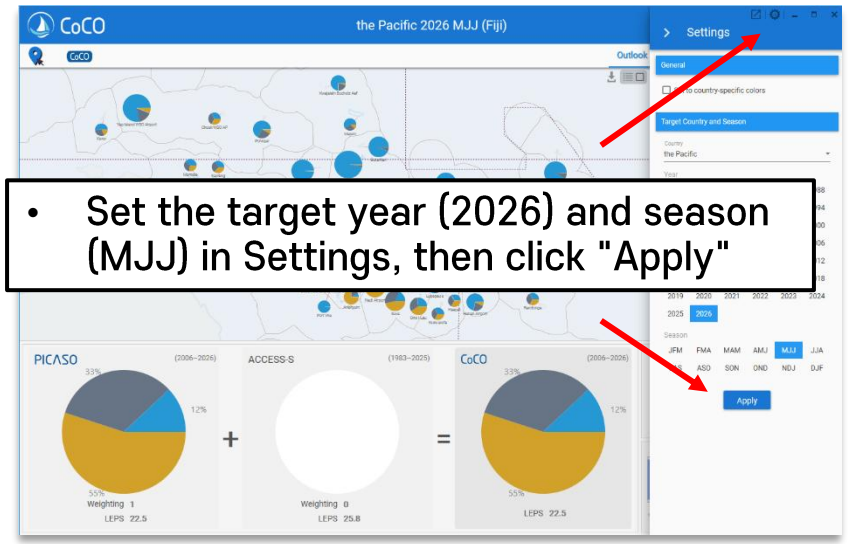


- In CoCO Settings, select ACCESS-S as the model and click "Apply"

③

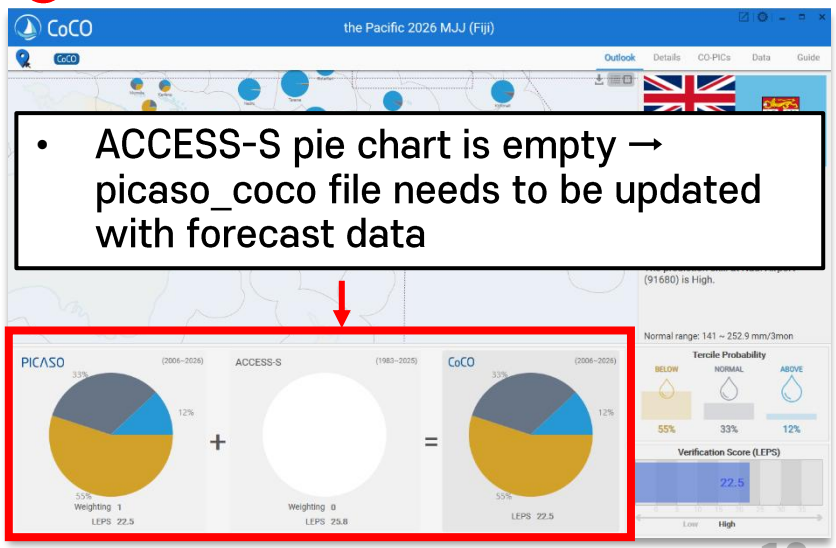
- Select a target station from the list (e.g., Nadi Airport)

④



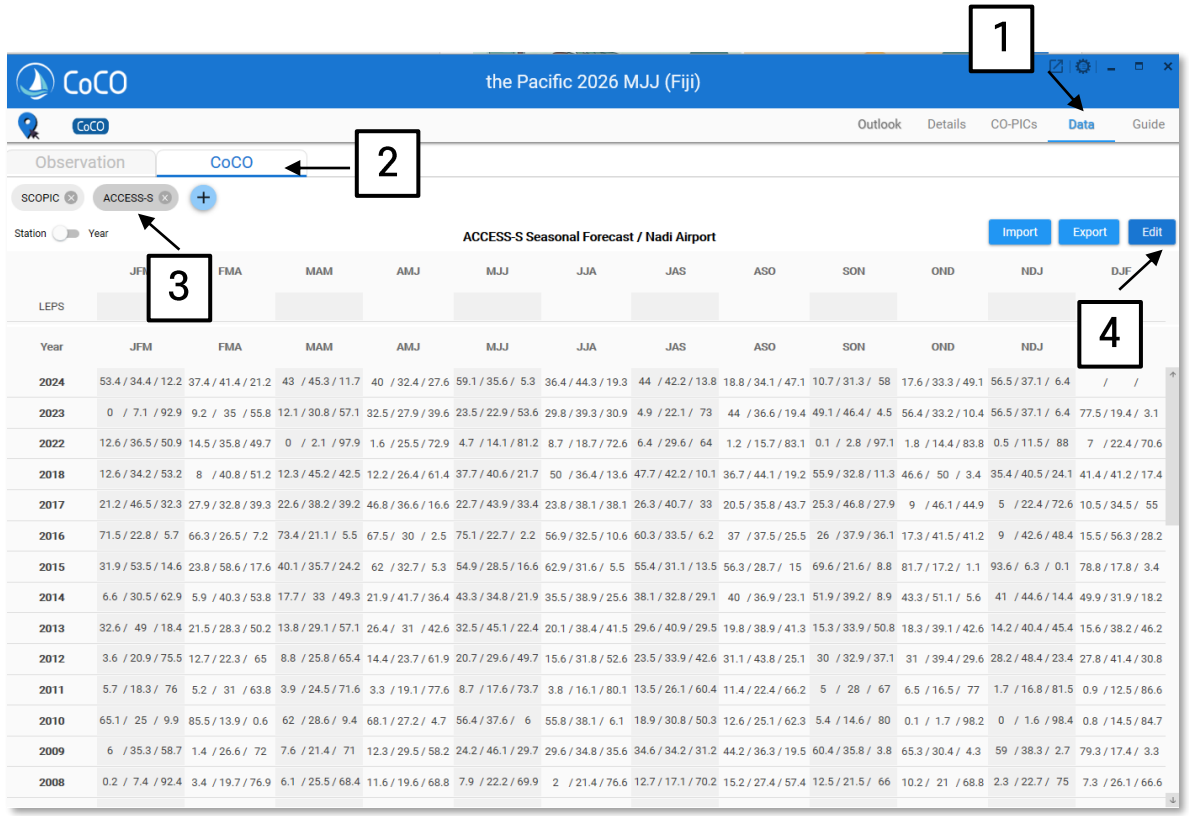
- Set the target year (2026) and season (MJJ) in Settings, then click "Apply"

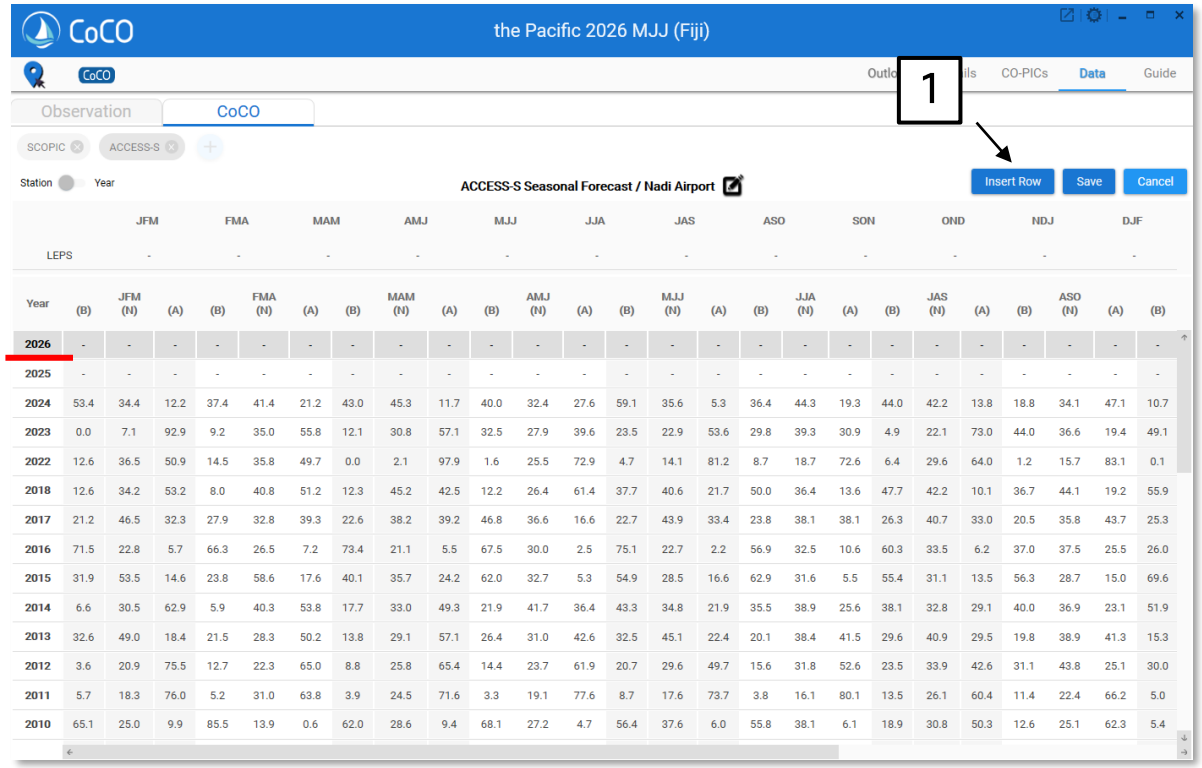
⑤



- ACCESS-S pie chart is empty → picaso_coco file needs to be updated with forecast data

Editing ACCESS-S Data in CoCO





- Click the "Data" tab → Select "CoCO" tab → Click "ACCESS-S" data → Click "Edit" button (top right)

- Click "Insert Row" (top right) to create a new row for the year 2026

Editing ACCESS-S Data in CoCO

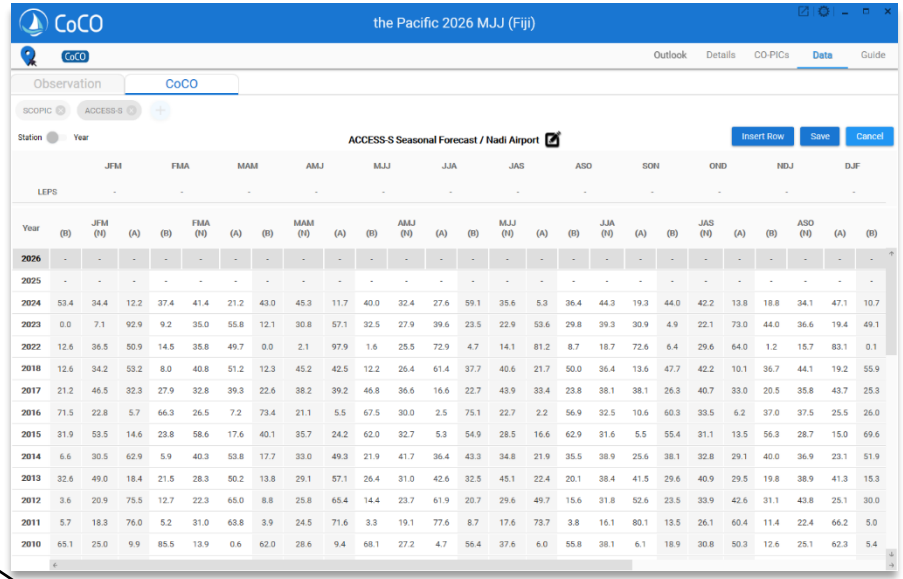
History Log

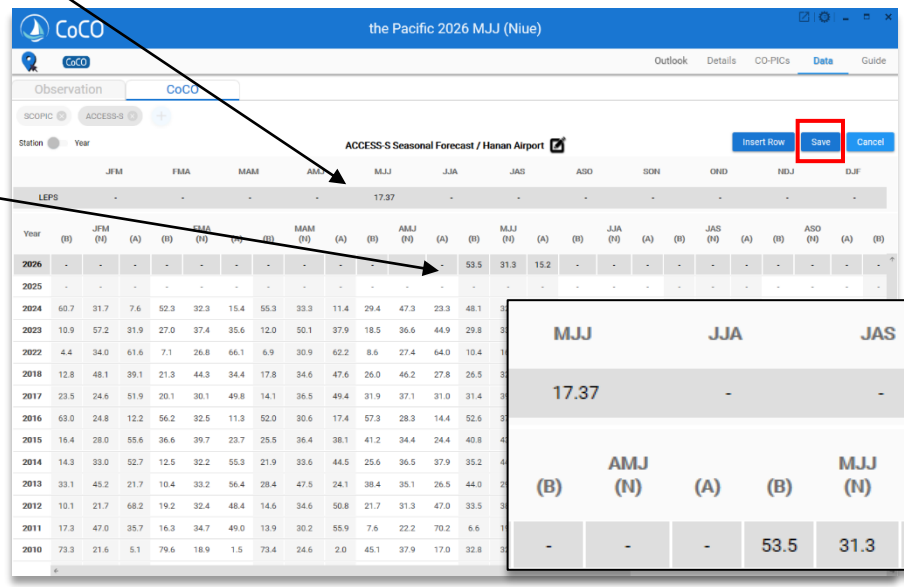
Number	Lat	Lon	LEPS
1	17.755°S	177.443°E	17.37

MJJ_rain.forecast.terciles.seasonal.nc

Table | Raw | Stat — Export

time	lat	lon	probB	probN	probA
2026-07-00 00:00:00.00+00:00	-17.500	177.083	53.535	31.313	15.152
2026-07-30 15:59:03.75+00:00	-17.500	177.083	51.515	29.293	19.192
2026-08-30 08:00:56.25+00:00	-17.500	177.083	55.556	22.222	22.222

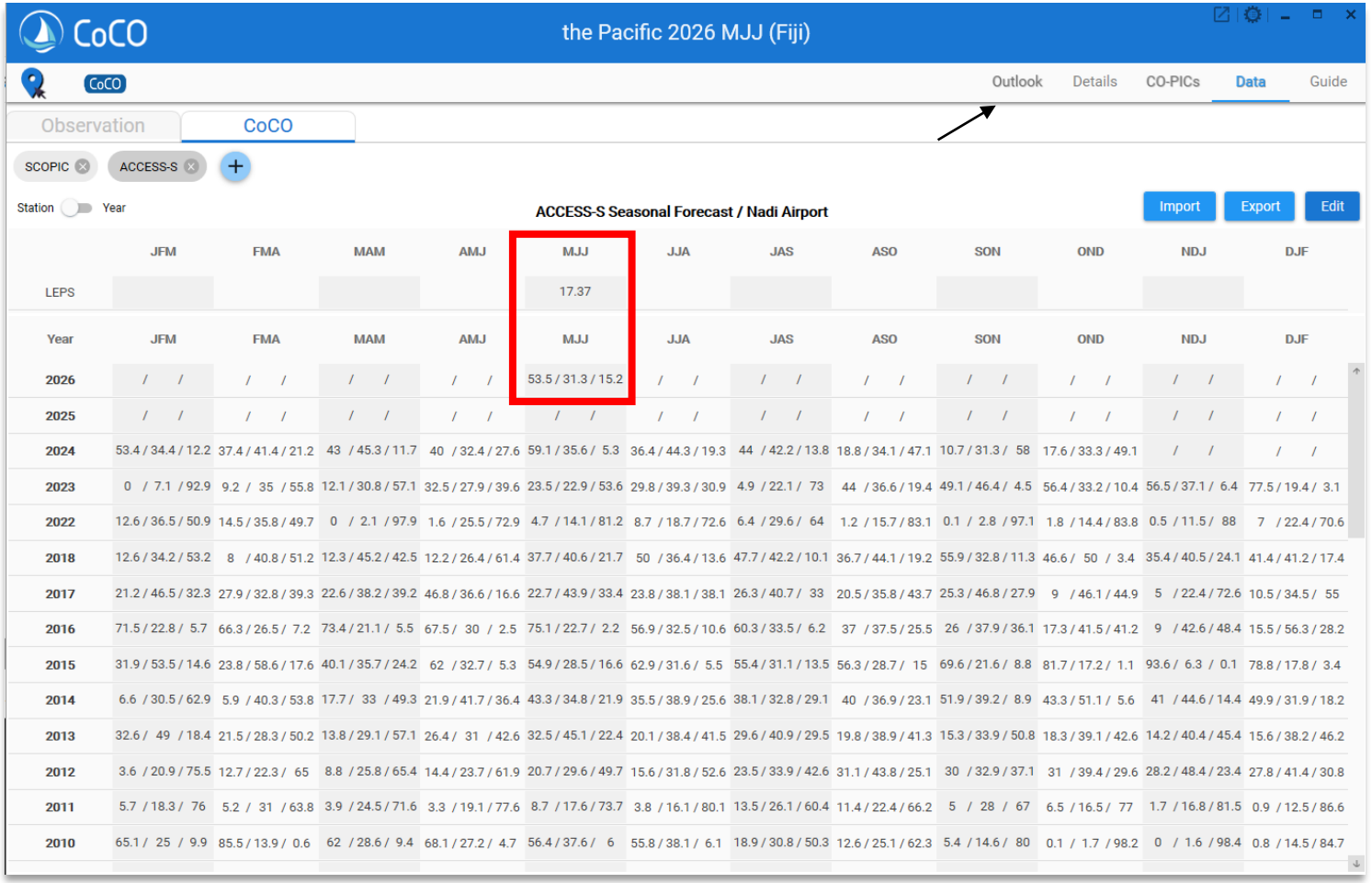




MJJ		JJA		JAS	
17.37		-		-	
AMJ (B)	AMJ (N)	AMJ (A)	MJJ (B)	MJJ (N)	MJJ (A)
-	-	-	53.5	31.3	15.2

- Enter NC_Sniper values (B, N, A) and LEPS Viewer score into the 2026 row, then click Save

Data Entry Completed

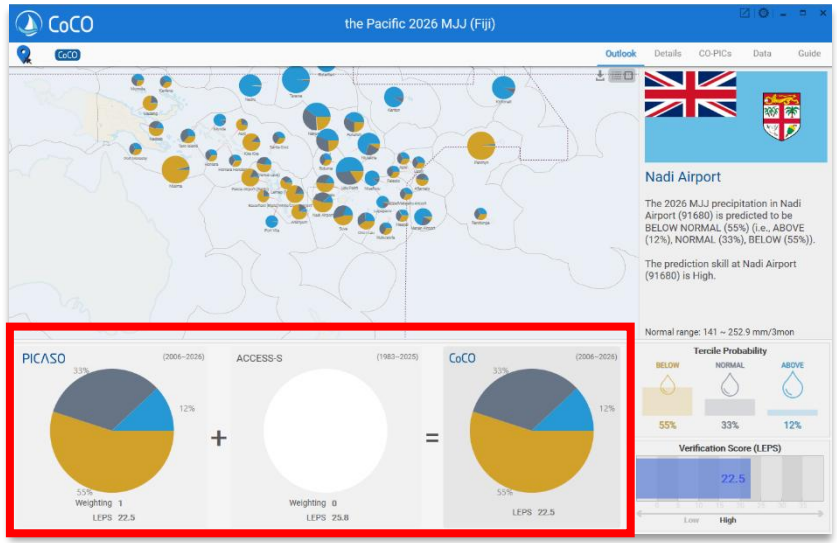


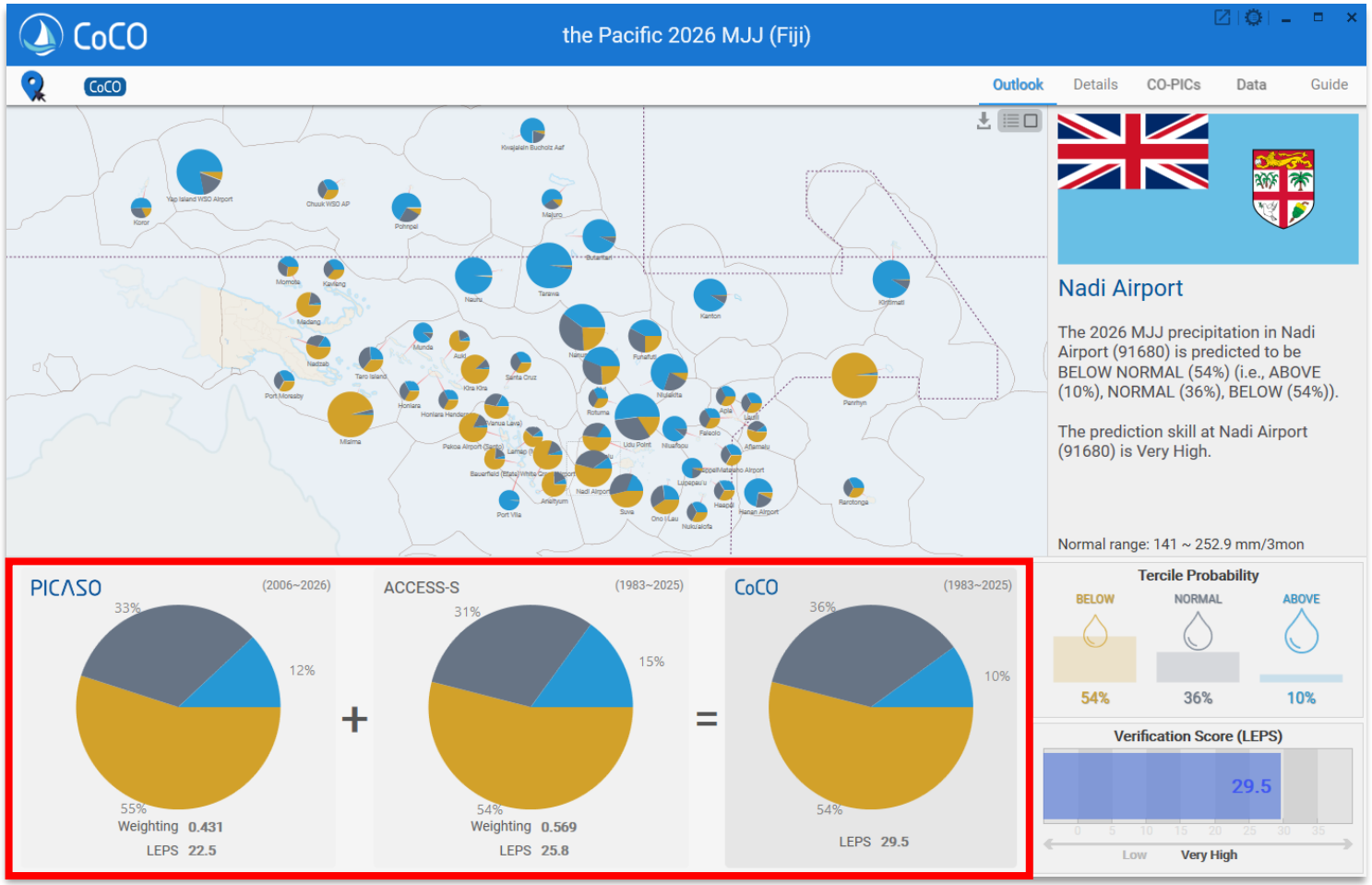
	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ	DJF
LEPS					17.37							
Year	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ	DJF
2026	/ /	/ /	/ /	/ /	53.5 / 31.3 / 15.2	/ /	/ /	/ /	/ /	/ /	/ /	/ /
2025	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
2024	53.4 / 34.4 / 12.2	37.4 / 41.4 / 21.2	43 / 45.3 / 11.7	40 / 32.4 / 27.6	59.1 / 35.6 / 5.3	36.4 / 44.3 / 19.3	44 / 42.2 / 13.8	18.8 / 34.1 / 47.1	10.7 / 31.3 / 58	17.6 / 33.3 / 49.1	/ /	/ /
2023	0 / 7.1 / 92.9	9.2 / 35 / 55.8	12.1 / 30.8 / 57.1	32.5 / 27.9 / 39.6	23.5 / 22.9 / 53.6	29.8 / 39.3 / 30.9	4.9 / 22.1 / 73	44 / 36.6 / 19.4	49.1 / 46.4 / 4.5	56.4 / 33.2 / 10.4	56.5 / 37.1 / 6.4	77.5 / 19.4 / 3.1
2022	12.6 / 36.5 / 50.9	14.5 / 35.8 / 49.7	0 / 2.1 / 97.9	1.6 / 25.5 / 72.9	4.7 / 14.1 / 81.2	8.7 / 18.7 / 72.6	6.4 / 29.6 / 64	1.2 / 15.7 / 83.1	0.1 / 2.8 / 97.1	1.8 / 14.4 / 83.8	0.5 / 11.5 / 88	7 / 22.4 / 70.6
2018	12.6 / 34.2 / 53.2	8 / 40.8 / 51.2	12.3 / 45.2 / 42.5	12.2 / 26.4 / 61.4	37.7 / 40.6 / 21.7	50 / 36.4 / 13.6	47.7 / 42.2 / 10.1	36.7 / 44.1 / 19.2	55.9 / 32.8 / 11.3	46.6 / 50 / 3.4	35.4 / 40.5 / 24.1	41.4 / 41.2 / 17.4
2017	21.2 / 46.5 / 32.3	27.9 / 32.8 / 39.3	22.6 / 38.2 / 39.2	46.8 / 36.6 / 16.6	22.7 / 43.9 / 33.4	23.8 / 38.1 / 38.1	26.3 / 40.7 / 33	20.5 / 35.8 / 43.7	25.3 / 46.8 / 27.9	9 / 46.1 / 44.9	5 / 22.4 / 72.6	10.5 / 34.5 / 55
2016	71.5 / 22.8 / 5.7	66.3 / 26.5 / 7.2	73.4 / 21.1 / 5.5	67.5 / 30 / 2.5	75.1 / 22.7 / 2.2	56.9 / 32.5 / 10.6	60.3 / 33.5 / 6.2	37 / 37.5 / 25.5	26 / 37.9 / 36.1	17.3 / 41.5 / 41.2	9 / 42.6 / 48.4	15.5 / 56.3 / 28.2
2015	31.9 / 53.5 / 14.6	23.8 / 58.6 / 17.6	40.1 / 35.7 / 24.2	62 / 32.7 / 5.3	54.9 / 28.5 / 16.6	62.9 / 31.6 / 5.5	55.4 / 31.1 / 13.5	56.3 / 28.7 / 15	69.6 / 21.6 / 8.8	81.7 / 17.2 / 1.1	93.6 / 6.3 / 0.1	78.8 / 17.8 / 3.4
2014	6.6 / 30.5 / 62.9	5.9 / 40.3 / 53.8	17.7 / 33 / 49.3	21.9 / 41.7 / 36.4	43.3 / 34.8 / 21.9	35.5 / 38.9 / 25.6	38.1 / 32.8 / 29.1	40 / 36.9 / 23.1	51.9 / 39.2 / 8.9	43.3 / 51.1 / 5.6	41 / 44.6 / 14.4	49.9 / 31.9 / 18.2
2013	32.6 / 49 / 18.4	21.5 / 28.3 / 50.2	13.8 / 29.1 / 57.1	26.4 / 31 / 42.6	32.5 / 45.1 / 22.4	20.1 / 38.4 / 41.5	29.6 / 40.9 / 29.5	19.8 / 38.9 / 41.3	15.3 / 33.9 / 50.8	18.3 / 39.1 / 42.6	14.2 / 40.4 / 45.4	15.6 / 38.2 / 46.2
2012	3.6 / 20.9 / 75.5	12.7 / 22.3 / 65	8.8 / 25.8 / 65.4	14.4 / 23.7 / 61.9	20.7 / 29.6 / 49.7	15.6 / 31.8 / 52.6	23.5 / 33.9 / 42.6	31.1 / 43.8 / 25.1	30 / 32.9 / 37.1	31 / 39.4 / 29.6	28.2 / 48.4 / 23.4	27.8 / 41.4 / 30.8
2011	5.7 / 18.3 / 76	5.2 / 31 / 63.8	3.9 / 24.5 / 71.6	3.3 / 19.1 / 77.6	8.7 / 17.6 / 73.7	3.8 / 16.1 / 80.1	13.5 / 26.1 / 60.4	11.4 / 22.4 / 66.2	5 / 28 / 67	6.5 / 16.5 / 77	1.7 / 16.8 / 81.5	0.9 / 12.5 / 86.6
2010	65.1 / 25 / 9.9	85.5 / 13.9 / 0.6	62 / 28.6 / 9.4	68.1 / 27.2 / 4.7	56.4 / 37.6 / 6	55.8 / 38.1 / 6.1	18.9 / 30.8 / 50.3	12.6 / 25.1 / 62.3	5.4 / 14.6 / 80	0.1 / 1.7 / 98.2	0 / 1.6 / 98.4	0.8 / 14.5 / 84.7

- Data entry is now complete — MJJ 2026: 53.5 / 31.3 / 15.2, LEPS: 17.37
- Click "Save" to apply

- ⚠️ Note: If the 2026 data is not saved after clicking Save, close PICΛSO and restart, then repeat the process.

CoCO Result: Before and After ACCESS-S Data Entry

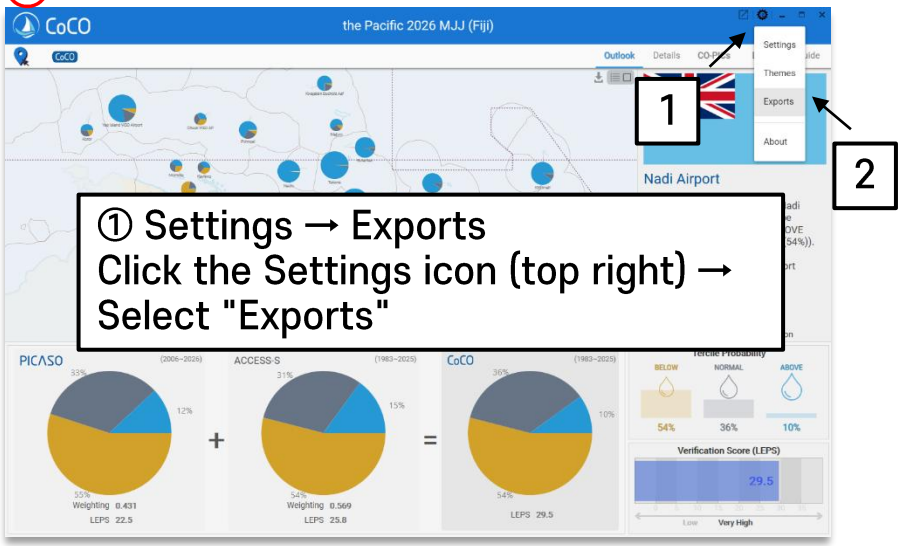




- Before: ACCESS-S data was empty → CoCO used only PICASO forecast
- After: ACCESS-S data entered → CoCO now combines PICASO+ ACCESS-S for a more accurate outlook

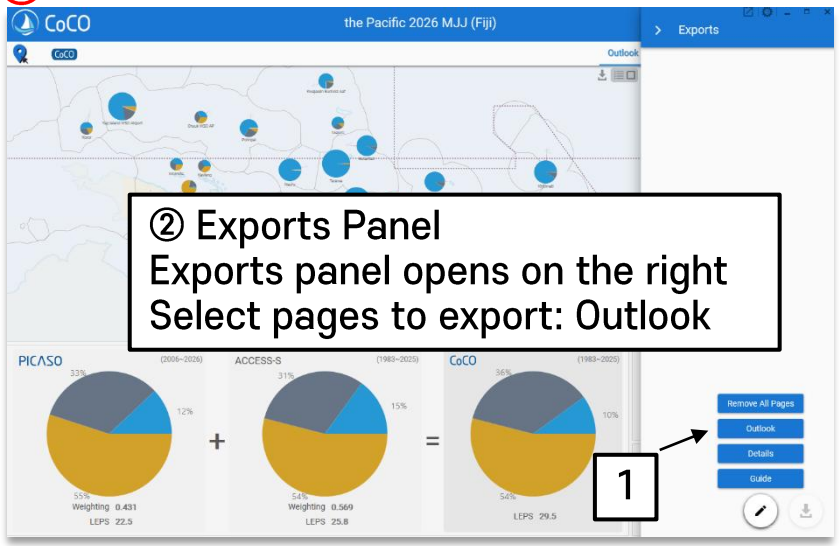
Exporting CoCO Outlook Results

①



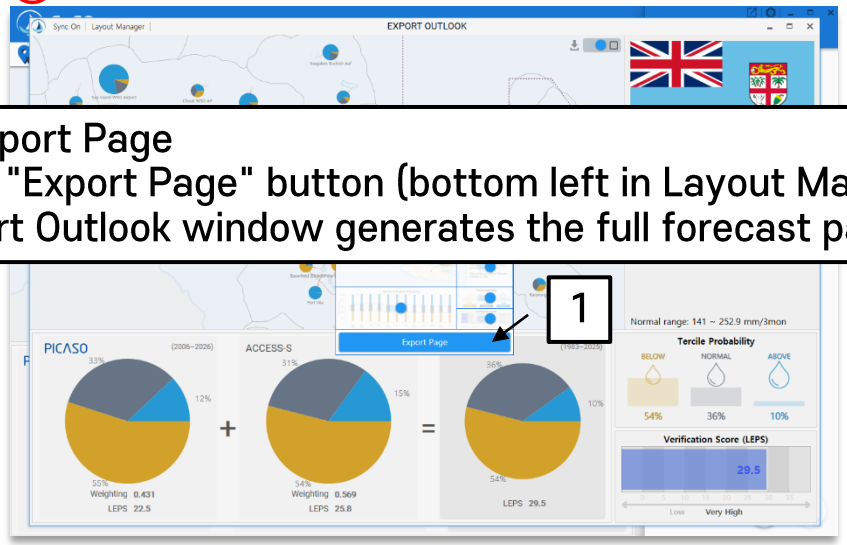
① Settings → Exports
Click the Settings icon (top right) →
Select "Exports"

②



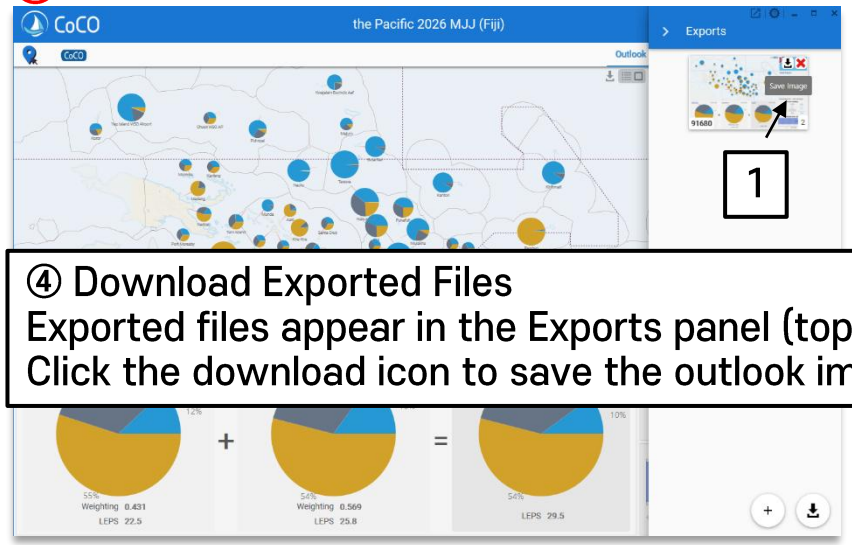
② Exports Panel
Exports panel opens on the right
Select pages to export: Outlook

③



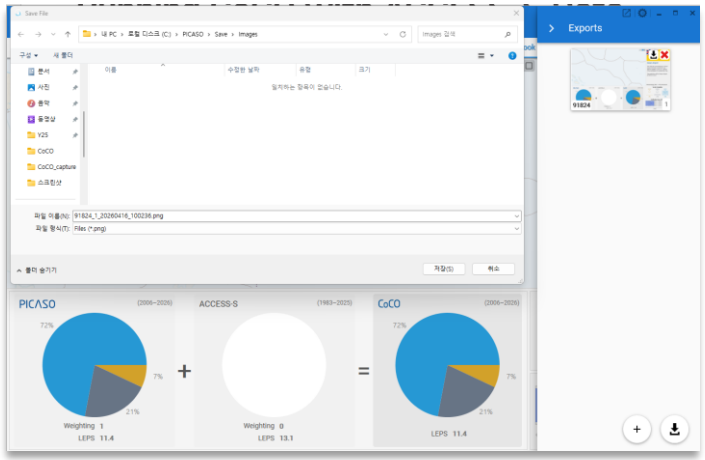
③ Export Page
Click "Export Page" button (bottom left in Layout Manager)
Export Outlook window generates the full forecast page

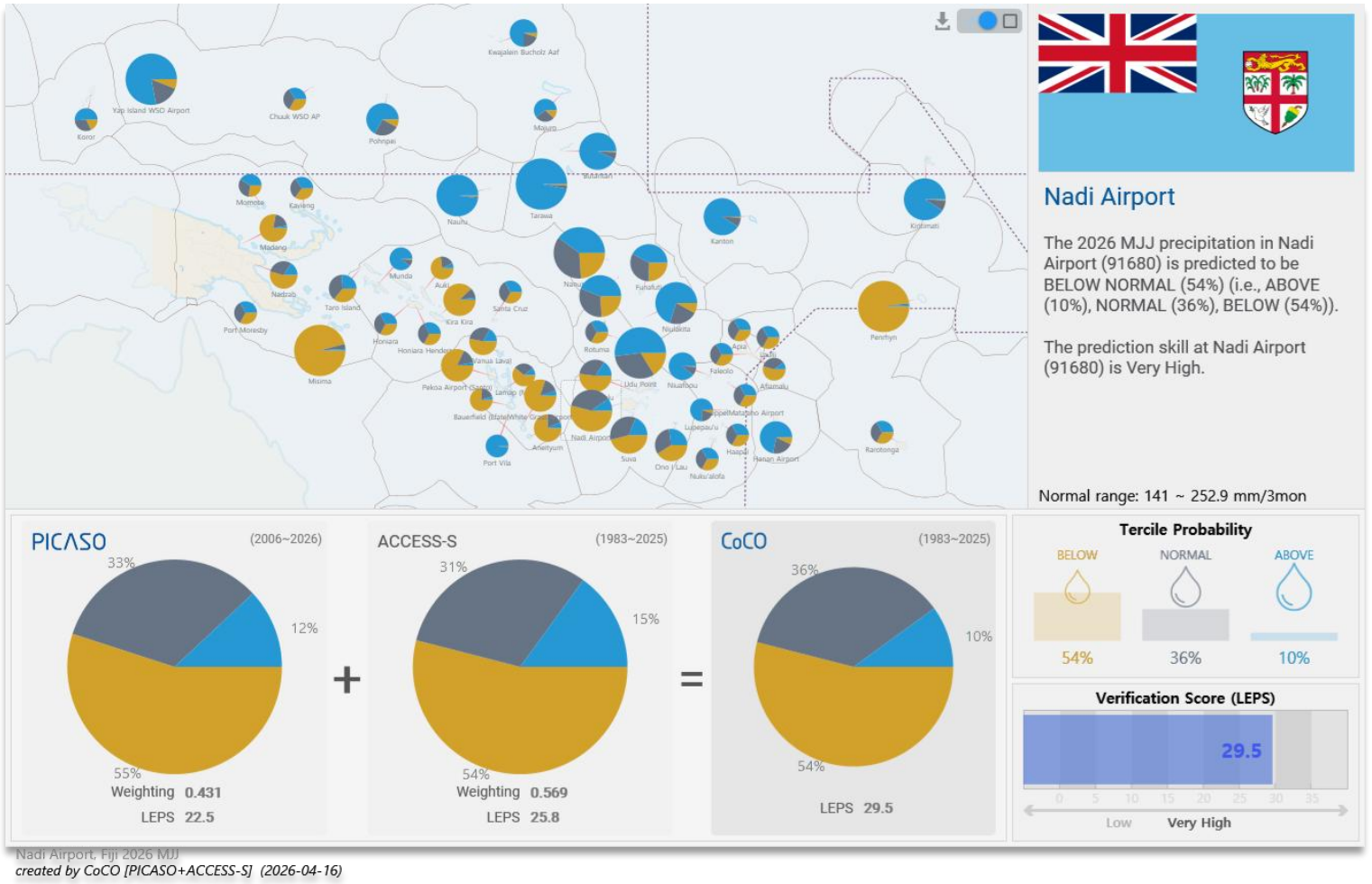
④



④ Download Exported Files
Exported files appear in the Exports panel (top right)
Click the download icon to save the outlook images

Exporting CoCO Outlook Results





- Exported outlook is saved as an image file — CoCO analysis with ACCESS-S is now complete!